McHenry, Brenda M.

From: Tom Ginn
Sent: Saturday, September 17, 2005 1:26 PM
To: Ehrich, Delmar R.
Cc: Gary Bigham; Brad Bessinger; Linda Ziccardi
Subject: Information needs
Attachments: Information Needs1.doc

--Privileged and Confidential--
--Prepared at the Request of Counsel--

Del:
Attached is our initial draft of information concerning the Illinois River Watershed that we will be seeking. I will be traveling on Monday and Tuesday, but will be back in the office on Wednesday if you wish to discuss.

Thomas C. Ginn, Ph.D.
Principal Scientist & Practice Director
Exponent, Inc.
23445 North 19th Avenue
Phoenix, AZ 85027

Office: 623.587.4121
Sedona: 928.282.3168
Mobile: 623.256.0624

3/19/2009

EXHIBIT
6

Exhibit 11

4:05-cv-00329
Oklahoma Ex. 0185

Privileged & Confidential
Prepared at Request of Counsel

Draft Information Needs – Oklahoma v. Tyson et al.

Privileged & Confidential
Prepared at Request of Counsel

Data Type	Potential Sources
Precipitation	NOAA (Exponent)
Surface runoff	U. of Arkansas, Oklahoma State, USGS

Aquatic foodweb

The aquatic foodweb category includes current and historical data on all trophic levels of the aquatic ecosystems and the condition of their habitat; primary producers – phytoplankton,

periphyton, aquatic macrophytes, primary consumers – aquatic macroinvertebrates, planktivorous fishes, secondary consumers – benthivorous and piscivorous fishes, waterfowl, and piscivorous wildlife. Types of data include, species distribution and abundance, habitat preference, chemical composition, stressors, historical fish kills.

Data Type	Potential Sources
Aquatic habitat characterization	US Fish & Wildlife Service
Aquatic community characterization	US Fish & Wildlife Service, US EPA, USGS, U. of Arkansas, Oklahoma State, other universities, Corps of Engineers-Tulsa District, Oklahoma Department of Wildlife Conservation; Arkansas Fish and Game Commission

Specific Reports

Exponent needs assistance to obtain the following identified reports.

Burks, S.L., and S/L. Kimball, 1988. Use of QUAL2E steady state simulation for evaluation of current and predicted future nutrient levels for the Illinois River to Tenkiller Ferry Lake.

Technical completion report to the U.S. Army Corps of Engineers, Tulsa District, Tulsa, Oklahoma.

Burks, S.L., D. Franko, J. Wihm, R. Meyer, A. Brown, and D. Parker, 1991. Final report on evaluation and assessment of factors affecting water quality of the Illinois River in Arkansas and Oklahoma. Submitted to US EPA, Region VI.

Nolen, S., J.H. Carroll, D.L. Combs, J.C. Staves, and J.N. Veenstra, 1988. Limnology of Tenkiller Ferry Lake Oklahoma, 1985 – 1986. U.S. Army Corps of Engineers, Tulsa District, Tulsa, Oklahoma.

Oklanhoma State Department of Health, 1977. Water Quality Survey of the Illinois River and Tenkiller Reservoir, June 1976 – October 1977.

Roberts/Shornick and Associates, 1984. Illinois River Assessment Report. Prepared for the Office of the Attorney General of Oklahoma.

Walker, W. W. Jr., 1987. Impacts of proposed wastewater diversion on eutrophication and related water quality conditions in the Illinois River, Oklahoma. Prepared for the Office of the Attorney General of Oklahoma.

McHenry, Brenda M.

From: Linda Ziccardi
Sent: Monday, September 19, 2005 11:17 AM
To: Brad Bessinger; Tom Ginn
Cc: Sheryl Law
Subject: RE: Information Needs

Please cc Sheryl Law as well - thanks

From: Brad Bessinger
Sent: Friday, September 16, 2005 5:16 PM
To: Gary Bigham; Tom Ginn
Cc: Linda Ziccardi
Subject: RE: Information Needs

Here is another document to add to the list. It is supposed to be a comprehensive summary of data up to 1991.

Oklahoma State University and University of Arkansas. 1991. Cooperative Report on Evaluation and Assessment of Factors Affecting Water Quality of the Illinois River in Arkansas and Oklahoma. Oklahoma State University, Stillwater, OK.

<< File: Information Needs.doc >>

McHenry, Brenda M.

From: Tom Ginn
Sent: Thursday, October 13, 2005 10:59 AM
To: Chris Mackay; Linda Ziccardi; Sheryl Law; Brad Bessinger; Dreas Nielsen
Subject: agenda for Science Day

--Privileged and Confidential--

Tentative agenda:

Photographic trip down the river and general comments
Available information and data gaps
Database and GIS
Conceptual model

Biological characteristics: phytoplankton, zooplankton, periphyton, BMI, fishes, mussels

Indications of injury
Summary of defenses, esp. for motion for injuction
Litigation strategy
Needed information
Next steps

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McHenry, Brenda M.

From: Linda Ziccardi
Sent: Tuesday, November 01, 2005 3:07 PM
To: Tom Ginn
Cc:
Subject: Eco slides

Attachments: Eco Cargill.ppt

Eco Cargill.ppt (5 MB)

Tom - I think I made all the revisions we discussed. I also added some notes for a few of the slides.

Linda

McHenry, Brenda M.

From: Linda Ziccardi
Sent: Tuesday, November 01, 2005 4:12 PM
To: Tom Ginn
Cc:
Subject: Eco Cargill.ppt

Attachments: Eco Cargill.ppt

Eco Cargill.ppt (5 MB)

I made some editorial corrections - just delete the last version.

McHenry, Brenda M.

From: Beamon, Sonja B. [SBeamon@faegre.com]
Sent: Thursday, November 03, 2005 12:43 PM
To: Tom Ginn;
Cc: Carney, Kristen Shults
Subject: Exhibits
Attachments: SFX2C7.pdf

Sent on behalf of Kristen Shults Carney.

Per your request, here are the exhibits attached to the Complaint.

<<SFX2C7.pdf>>

McHenry, Brenda M.

From: Sheryl Law

Sent: Wednesday, March 01, 2006 9:35 AM

To: Tom Ginn;

Subject: health advisories

Privileged and Confidential--
--Attorney Work Product--
--Prepared at Request of Couns

The following advisories were found on the OK DEQ website. There is a state-wide fish consumption advisory for mercury in fish, especially for all species of black bass, striped bass, white bass, hybrid striped bass, walleye, saugeye, and flathead catfish. The advisory does not apply to bottom-dwelling or bottom-feeding fish.

So far, Ian and I have not found any other health advisories based on water quality.

http://environ.okstate.edu/OKWATER/2005/proceedings/Wright.pdf
http://www.deq.state.ok.us/factsheets/land/fishmerc.pdf

Sheryl

McHenry, Brenda M.

From: Brad Bessinger
Sent: Thursday, March 02, 2006 11:55 AM
To: Tom Ginn;
Cc: Sheryl Law; Brooke Redding
Subject: Cargill

Attachments: Tables.doc

Here is a table I made back in October. To address your question about impairment of beneficial uses in Lake Tenkiller, I report that the NUMP report found no impairment with respect to public water supply.

Tables.doc (222 KB)

McHenry, Brenda M.

From: Sheryl Law
Sent: Friday, March 03, 2006 4:44 PM
To: Tom Ginn;
Subject: Confidential

Attachments: owrb_03a.pdf

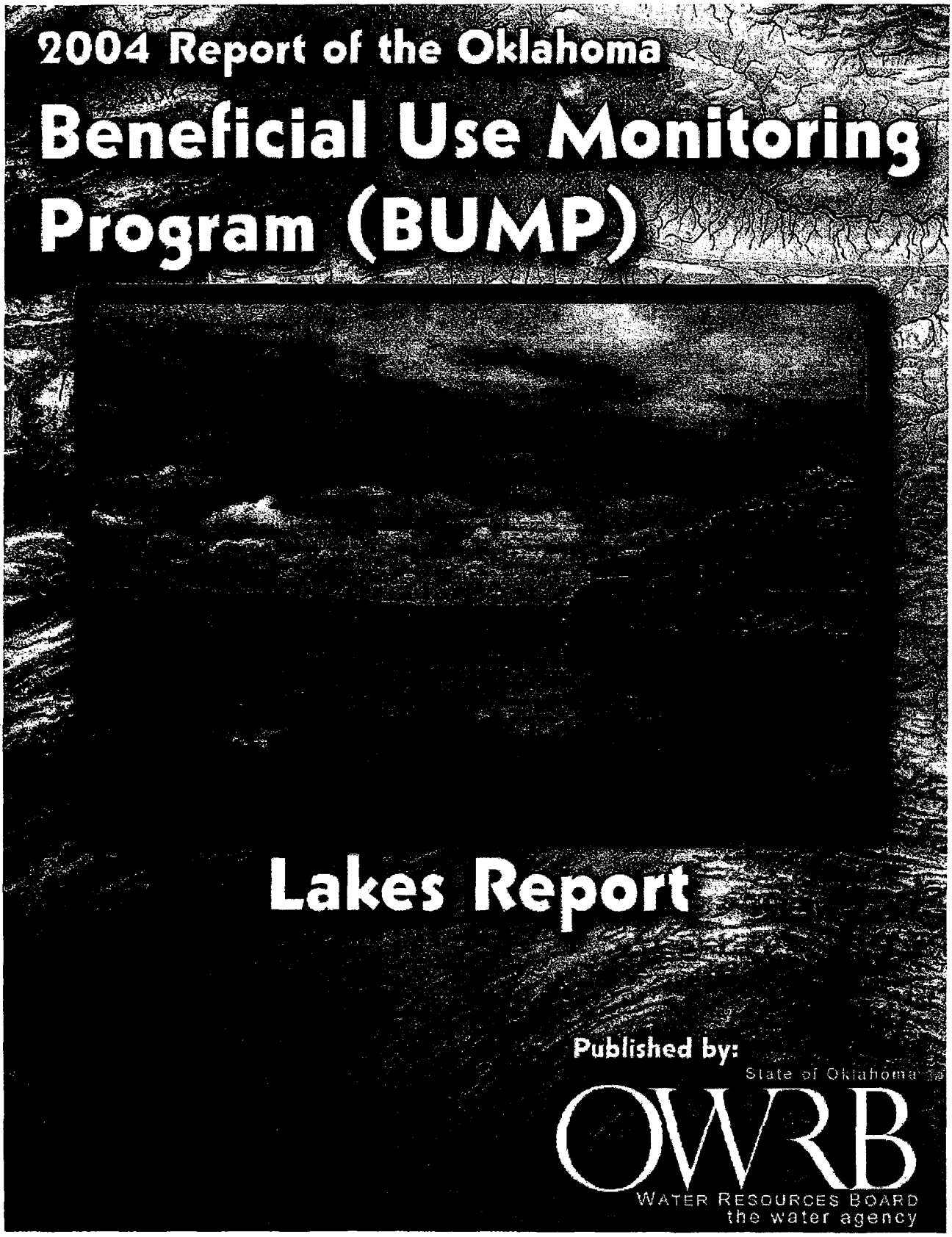
From the 2003 BUMP report

owrb_03a.pdf (1 MB)

Privileged and Confidential--

--Attorney Work Product--

--Prepared at Request of Counsel--


2004 Report of the Oklahoma
Beneficial Use Monitoring Program (BUMP)
Lakes Report
Published by:
State of Oklahoma
OWRB
WATER RESOURCES BOARD
the water agency

Tenkiller Ferry Lake

Tenkiller Ferry Lake was sampled for four quarters, from October 2001 through July 2002. Water quality samples were collected at seven (7) sites to represent the riverine, transitional, and lacustrine zones of the lake as well as major arms. Samples were collected at the lake surface at all sites and 0.5 meters from the lake bottom at sample site 1. The lake-wide annual turbidity value was 10 NTU (Plate 99), true color was 23 units, and secchi disk depth was 107 centimeters. Based on these three parameters, Tenkiller Ferry Lake had excellent water clarity when compared to other Oklahoma lakes. A trophic state index (TSI), using Carlson's TSI (chlorophyll-a), was calculated using values collected at all sites for four quarters (n=28). The average TSI was 56 (Plate 99), classifying the lake as eutrophic, indicative of high levels of primary productivity and nutrients. TSI values varied from season to season and from site to site. Closer to the dam area TSI values were generally mesotrophic in the fall and winter, bordering on eutrophic in the spring and summer. As you moved up the lake values were generally eutrophic in the fall, mesotrophic in the winter and eutrophic to hypereutrophic in the spring and summer. At the upper end of the lake TSI values were generally eutrophic or hypereutrophic year round (see Figure 218). All turbidity values were well below the Oklahoma Water Quality Standard (OWQS) of 25 NTU with the exception of site 5 in the fall which was 26 NTU (see Figure 219a). According to the Use Support Assessment Protocols (USAP) outlined in the Oklahoma Administrative Code (OAC) 785:46-15-5, a beneficial use is considered not supported if ≥25% of the samples exceed the screening level prescribed in the OWQS (25 NTU for turbidity). If 10% to 25% of the turbidity values exceed the numeric criteria of 25 NTU, the lake should be listed as partially supporting beneficial uses. Tenkiller Lake is fully supporting its Fish & Wildlife Propagation (FWP) beneficial use as it relates to turbidity. Seasonal true color values are displayed in Figure 219b. All of the true color values were well below the numeric criteria of 70 units and the Aesthetics beneficial use is considered fully supported.

Vertical profiles for dissolved oxygen, pH, temperature, specific conductance, oxidation-reduction potential, and salinity were recorded at all seven sample sites. Salinity values ranged from 0.02 parts per thousand (ppt) to 0.13 ppt, indicating low to moderate salt content compared to most Oklahoma lakes. Salinity values varied based on the site location with higher salinity occurring in the upper end of the lake. Specific conductance ranged from 119.1 mS/cm in the spring quarter to 277.3 mS/cm in the summer, indicating minimal to moderate levels of electrical conducting compounds (salts) were present in the lake system. In general, pH values were neutral to slightly alkaline, ranging from 6.84 to 8.58 units. According to USAP (OAC 785:46-15-5), pH values are exceeding standards if they fall outside the 6.5 to 9.0 range for 25% of the values and should be listed as not supporting beneficial uses. If 10 to 25% of the pH values fall outside the 6.5 to 9.0 range, the lake should be listed as partially supporting beneficial uses. All pH values were within the acceptable range so Lake Tenkiller is

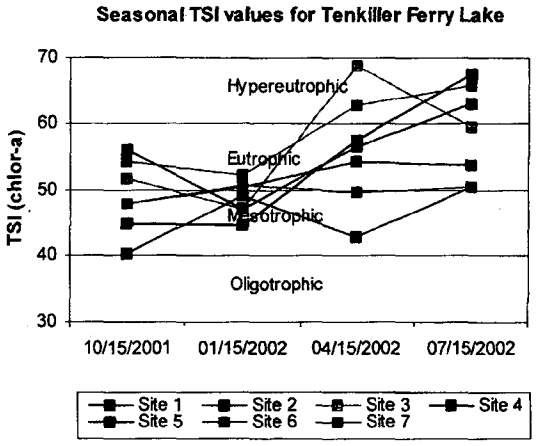


Figure 218. TSI values for Tenkiller Ferry Lake.

fully supporting its FWP beneficial use based on pH. Oxidation-reduction potentials (redox) ranged from 81 mV at the sediment-water interface in the summer quarter at site 1 to 614 mV in the winter. Redox readings indicated that reducing conditions were not present in the reservoir to any appreciable degree at any point during Water Resources Board sampling events. The lake was not thermally stratified in the winter or spring quarters and dissolved oxygen (D.O.) concentration fell below 4.2 mg/L throughout the water column and readings were generally above 6.0 mg/L in the majority of the water column (Figure 219d-213e). The lake was thermally stratified in the fall quarter between 21 and 22 meters below the lake surface and D.O. values were below 2.0 mg/L from the 22 meter depth to the lake bottom at 31.5 meters at site 1 (Figure 219d). In the summer, the lake was strongly thermally stratified at several discrete 1-meter intervals, the first between 6 and 7 meters with the water temperature dropping from 29.11° Celsius at 6 meters to 21.9° Celsius at 11 meters. From the 8-meter depth to the lake bottom at 38.4 meters D.O. values were all less than 2.0 mg/L (see Figure 219f). If D.O. values are less than 2.0 mg/L for greater than 70% of the lake volume, the FWP beneficial use is deemed not supported (OAC 785:46-15-5). If D.O. concentrations are less than 2.0 mg/L for 50 to 70% of the water column, the FWP beneficial use is deemed partially supported. According to USAP, the FWP beneficial use is considered not supported at Tenkiller Ferry Lake as 80% of the water column was anoxic in the summer. In the fall quarter 30% of the water column was anoxic which was not sufficient to result in a partially supporting or not supporting designation. The lake was sampled for total dissolved solids, chlorides and sulfates to assess its Agriculture beneficial use. Sampling in 2001-2002 found the Agriculture beneficial use to be fully supported based on numerical criteria located in OAC 785:45 – Appendix F.

Collected water samples were analyzed for nutrients, including total nitrogen and total phosphorus, although there are currently no numerical OWQS for these parameters. The lake-wide total nitrogen (TN) average for sample year 2001-2002 was 1.28 mg/L at the lake surface, which is a very high value to have as a lake average. The TN at the surface ranged from 0.47 mg/L to 2.91 mg/L, which is a very high nitrogen concentration to have in a lake at the surface. The highest value was in the winter quarter and the lowest value was in the fall. The lake-wide total phosphorus (TP) average for sample year 2001-2002 was 0.063 mg/L at the lake surface. The surface TP ranged from 0.006 mg/L to 0.156 mg/L. The highest surface TP value was reported in the fall and the lowest was also reported in the fall quarter. The nitrogen to phosphorus ratio (TN: TP) was approximately 20:1 for sample year 2001-2002. This value is greater than 7:1, characterizing the lake as phosphorus-limited (Wetzel, 1983).

Tenkiller Ferry Lake was also sampled for metals at seven sites during the spring quarter in 2002. Use support assessment for metals is made in the same fashion as turbidity and true color. Results of metals sampling showed the lake to be fully supporting its FWP beneficial use and Public and Private Water Supply (PPWS) beneficial use based on metal (toxic) compounds in the water column. The Oklahoma Department of Environmental Quality (ODEQ) sampled the lake in 1999 as part of their Toxics Monitoring Program and detected no compounds at the ODEQ screening level or consumption advisory level. The lake is fully supporting its Fish Consumption beneficial use.

In summary, Tenkiller Ferry Lake was classified as eutrophic, indicative of high primary productivity and nutrient levels (Plate 99). Water clarity was excellent at this lake primarily due to the absence of inorganic turbidity levels that are commonly seen in Oklahoma reservoirs. The lake was fully supporting its Aesthetics beneficial use based on trophic status and true color values. A Total Maximum Daily Load (TMDL) is currently being developed for the lake to mitigate the effects of nutrients to the system. A high level of total nitrogen in the lake was documented which should be mitigated. Tenkiller Ferry Lake was supporting its FWP beneficial

use based on nephelometric turbidity and pH. The lake was not supporting its FWP beneficial use based on low D.O. concentrations in 80% of the water column. The very low D.O. values seen in the summer time in the lake are a cause for serious concern. Any time 80% of the water column has D.O. less than 2.0 mg/L you have a serious problem that should be further addressed. The United States Army Corps of Engineers constructed Tenkiller Ferry Lake in 1953. The lake was authorized to serve for flood control and hydroelectric power. Today the lake serves many other purposes and is one of the most heavily used recreational lakes in Oklahoma. Tenkiller Ferry Lake is one of the lake jewels of Oklahoma and it should be managed and maintained in that fashion.

McHenry, Brenda M.

From: Carney, Kristen Shults [KCarney@faegre.com]
Sent: Saturday, March 25, 2006 4:22 PM
To: Tom Ginn
Subject: Tenkiller - good fishing, bad Tahlequah (NRD case)
Attachments: Oklahoma Bass Fishing.pdf; Pryor Daily Times 031506- STIR objects to composting.pdf

For your review.

LAWYER BIOGRAPHIES | PRACTICE EXPERIENCE | CONTACT US

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McHenry, Brenda M.

From: Carney, Kristen Shults [KCarney@faegre.com]
Sent: Tuesday, March 28, 2006 6:34 PM
To: Tom Ginn
Subject: Biosecurity protocols
Attachments: 1889_001.pdf

FYI - These are the biosecurity protocols that we received from the State, for your review.

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McHenry, Brenda M.

From: Carney, Kristen Shults [KCarney@faegre.com]
Sent: Thursday, March 30, 2006 4:51 PM
To: Tom Ginn
Subject: FW: Cargill/Status Report Deadlines

Privileged and Confidential

FYI: I just learned that we expect to receive a copy of the State's general sampling plan on April 13.

For now, the following deadlines have also been agreed to by the parties (we will know more after the scheduling plan is submitted to the Court):

Rule 26(a) disclosures due: April 28, 2006
Fact discovery deadline: July 2007
Expert Depositions: by the end of 2007
Trial: Sometime in the first quarter of 2008

McHenry, Brenda M.

From: Carney, Kristen Shults [KCarney@faegre.com]
Sent: Monday, April 03, 2006 11:42 AM
To: Tom Ginn;
Subject: Bass Fishing (NRD)
Attachments: 060402 Fort Gibson Tops 2005 List.pdf

For your review.

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McHenry, Brenda M.

From: Carney, Kristen Shults [KCarney@faegre.com]
Sent: Saturday, April 15, 2006 2:23 PM
To: Tom Ginn
Subject: Data collected by State (NRD Case)
Attachments: 2607_001.pdf

For your review and for discussion on Monday.

LAWYER BIOGRAPHIES | PRACTICE EXPERIENCE | CONTACT US

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McHenry, Brenda M.

From: Carney, Kristen Shults [KCarney@faegre.com]
Sent: Wednesday, April 19, 2006 8:09 PM
To: Tom Ginn
Subject: ODAFF Testing Protocol
Attachments: ODAFF.testing.protocol.pdf

For your review.

LAWYER BIOGRAPHIES | PRACTICE EXPERIENCE | CONTACT US

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COLORADO | MINNESOTA | IOWA | LONDON | FRANKFURT | SHANGHAI

McHenry, Brenda M.

From: Jane Sexton
Sent: Monday, April 24, 2006 1:16 PM
To: Tom Ginn
Cc:
Subject: RE: Review biosecurity guidelines

Hello Tom As requested, here are my comments on the biosecurity document that you sent me this morning. The biosecurity guidelines are pretty comprehensive and I agree with most of their steps with the following exceptions.

Biosecurity item #2: It will be impractical to wash the sampling vehicle before each visiting each farm. Roundtrip transit time from the car wash to the farm will need to be considered. Also, dirt and dust from the roads as one drives to and from the car wash and the farms will still get on the sampling vehicle. OSHA states that the tires and undercarriage should be cleaned when entering and leaving the farm. Perhaps we could ask to use a hose at each farm to clean down the sampling vehicle before we leave.

Biosecurity item #3 (also #9): Samples should be kept in coolers; not double trash bagged. Used and clean equipment should always be kept separated; double trash bags should be used for the equipment. Also, some way to differentiate between the clean and dirty equipment should be implemented. (Note -- it is difficult to see through the trash bags; perhaps colored tags could be used.)

Biosecurity item #4: It is important to permit only essential workers and vehicles, however, given the amount of equipment, sample jars/bottles, wash water, disinfectants, decon solvents, etc. required to complete the planned sampling activities; the sampling team will have to drive onto the property. Perhaps a better solution would be to limit the number of vehicles and consolidate personnel and equipment as much as possible into the minimum number of vehicles. Parking at least 100 feet from the poultry house is a good idea.

Biosecurity item #6 (also mentioned in #2): OSHA states that one should use either disposable boot covers OR wash PVC/rubber boots prior to leaving the specific poultry farm. Just from walking at the site, the bottoms of boot covers generally shred into bits quite rapidly. It would be better to require that PVC/rubber boots be worn and that the boots be washed prior to leaving the site. Prior to leaving, water from the boot wash should be disposed of at the farm. Also, one pair of shoes for driving in the sampling vehicle and cleaned PVC/rubber boots should be stowed in the back.

Biosecurity item #8: This should be "when finished at each farm."

Biosecurity item #11 and #12: Hand hygiene should consist of hand washing for 15-20 seconds.

What kind of disinfectant will they be using on the tires? sampling personnel's hands? clipboards? OSHA (2004) states that: "Contact with organic material such as dust, dirt, litter, and manure can decrease the effectiveness of some disinfectants and thus the possibility persists that viruses will survive." EPA registered products that have a claim of being effective against influenza viruses should be used. The Centers for Disease Control guidelines for infection control suggest the use of antimicrobial rinses Endure 300 and Endure 320. Concentrates that have been registered with the U.S. EPA as effective against influenza virus strains include: Oasis 499 HBV, Oasis Pro 14 Antibacterial All Purpose Cleaner, HB Quat, and A-456-N. Ready-to-use sprays and wipes include Oasis Pro TB Disinfectant Wipes, Oasis Pro TB Disinfectant Cleaner Germicidal Solution, Asepti-Wipe II,

and Asepticare Disinfectant Foam Cleaner."

Other comments:

1. The biosecurity guidelines mention that a "facemask" should be worn by the sampling personnel. The minimum recommendation is a disposable particulate respirator (e.g. N95, N99 or N100). Also, if a full-face respirator is not worn then goggles should be worn with the respirator to protect the mucous membranes of the eyes.

2. Double gloves should be worn by the sampling team. Gloves should be changed if torn or otherwise damaged. Remove gloves promptly after use, before touching non-contaminated items and environmental surfaces.

3. The field team should be instructed to be vigilant for the development of fever, respiratory symptoms, and/or eye infections for 7-10 days after their last exposure to the birds or potentially contaminated surfaces. Also, while offsite, field personnel should be instructed to practice good respiratory and hand hygiene to lower the risk of possible virus transmission to themselves and others.

4. Recommend that the field team should receive the current flu season's vaccine to reduce the possibility of dual infection with the seasonal flu and the avian flu.

--Jane--

From: Tom Ginn
Sent: Monday, April 24, 2006 9:27 AM
To: Jane Sexton
Cc:
Subject: sampling protocol

Jane:
The State of OK has released the attached sampling "protocols" for waste, soil, runoff, and groundwater. Gary and I are supplying comments to the client. What is your opinion on the adequacy of the decontamination procedure for waste and soil samples? esp. re: biohazard concerns for avian flu (protocol attached)? We are supplying initial comments at COB today.

Thanks.

Thomas C. Ginn, Ph.D.
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McHenry, Brenda M.

From: Carney, Kristen Shults [KCarney@faegre.com]
Sent: Wednesday, April 26, 2006 11:28 AM
To: Tom Ginn;
Cc: Sperrazza, Quynh C.
Subject: Work Plans

As we discussed, please proceed with preparation of the following two work plans:
A.
B. Biological Impacts/Lost Uses Work Plan (fish tissue, sediments, and benthic organisms, etc.)

LAWYER BIOGRAPHIES | PRACTICE EXPERIENCE | CONTACT US

FAEGRE & BENSON

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COLORADO | MINNESOTA | IOWA | LONDON | FRANKFURT | SHANGHAI

McHenry, Brenda M.

From: Jane Sexton
Sent: Friday, May 12, 2006 5:28 PM
To: Tom Ginn,
Subject: Approval of H&S Questionnaire for Oklahoma Site Visit

Importance: High

Attachments: SiteVisitQuestionnaire_5-12.doc

This email is to acknowledge the approval of the health and safety (H&S) site visit questionnaire (see attached) for your site visit to various locations in northeastern Oklahoma.

Contract No. PH09722.001 1701/2101
Exponent personnel: Tom Ginn
Level of protection: Level D

Please note the following items: 1) be aware of possible slip, trip, and fall hazards while you are in the field; 2) please remove or wash any dirt or mud from your boots before you leave the site; and 3) please take a copy of the attached H&S questionnaire with you into the field.

Please call me after your return from Oklahoma to let me know that you have returned safely. As always, if you have any health and safety concerns, please feel free to call me. Thanks.

SiteVisitQuestionnai
e_5-12.do...

--Jane--

--Privileged and Confidential--
--Attorney Work Product—

--Prepared at Request of Counsel--

Exponent

HEALTH AND SAFETY SITE VISIT QUESTIONNAIRE

This questionnaire documents and addresses safety for site visits by Exponent personnel and can be used as the first step in obtaining approval from the Safety manager for entering the field ~~and to document and address safety for site visits~~. The information will be~~is~~ used by the Safety manager to determine ~~whether~~ if additional information is required, such as 1) a new site-specific H&S plan is required, 2) an addendum to an existing site-specific H&S plan is required, or ~~whether~~ 3) a short memo summarizing the risks and the proposed safety procedures is required. The information will also be used to determine whether or not the proposed field staff ~~has~~ have the appropriate medical monitoring, H&S training, and Exponent safety clearance for performing the fieldwork. As a general rule of thumb, an Exponent site-specific H&S plan or addendum to an existing Exponent H&S plan will be required if 1) chemicals are being used, 2) personal protective~~on~~ equipment above modified level D is necessary, 3) a site hazard is present which requires that the work be performed according to one of Exponent's written safety programs (i.e., confined space), 4) the site is a designated hazardous waste site, and/or 5) samples are being collected. ~~A memo describing the proposed safety procedures and h~~Hospital location and contact information ~~can~~ must be submitted concurrently with ~~the~~ this questionnaire ~~for approval~~. Depending on project requirements, a memo describing the proposed safety procedures can also be submitted.

~~However, if it is determined that the work requires the preparation of a health and safety plan, the information contained in the memo will need to be incorporated into the applicable health and safety plan.~~

Site Name: Northeastern Oklahoma

Client: Delmar Faegre & Benson

Project Number: PH09722.001 1701/2101

Project Manager: Tom Ginn

Work Dates: May 15-19, 2004

~~Field~~ Exponent Staff: Tom Ginn

Cellular phone number(s): (425) 503-4901 (Bigham)

Summary of Proposed Activities: Site tour

New Project or Project with an existing Exponent H&S plan: New project

Type of facility or site: Poultry farms

Proposed site safety officer: None

Potential hazardous chemicals (include concentrations, if available): None

Potential physical hazards: Slip/trip/fall

Do client H&S procedures need to be followed? No

Proposed PPE: Boots; life vests when on water

List of chemicals that will be used (decontamination, preservatives, field tests): None

Exponent

McHenry, Brenda M.

From: Carney, Kristen Shults [KCarney@faegre.com]

Sent: Friday, May 26, 2006 8:23 AM

To: Tom Ginn

Subject: News Articles (NRD case)

Attachments: 060521 Lakes Water Problem Blue-Green Algae Gets Scientists Attention.pdf; 060524 Tulsa Officials Challenge Report on Beaty Creek Water Quality.pdf; 060522 Algae Discovery Should Provide Wake-up Call.pdf

For your review

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McHenry, Brenda M.

From: Rick Nelson
Sent: Friday, May 26, 2006 1:14 PM
To: Tom Ginn;
Cc: Jane Sexton
Subject: Biological Investigation SAP

Attachments: SAP_Bio_26may06.pdf

Tom

Here is the Bio SAP.

Regards,
Rick

SAP_Bio_26may06.
pdf (8 MB)

Rick Nelson
Senior Publications Manager
Exponent
DataComm
4875 Pearl East Circle, Ste 201
Boulder, Colorado 80301
303.544.2029 (direct)
nelsonr@exponent.com

McHenry, Brenda M.

From: Sheryl Law
Sent: Tuesday, May 30, 2006 1:55 PM
To: Tom Ginn;
Subject: Peacheater Creek

http://www.okcc.state.ok.us/WQ/peacheater_creek.htm

News about water quality in Peacheater Creek.

Privileged and Confidential--

--Attorney Work Product--

--Prepared at Request of Counsel--

Sheryl Law

McHenry, Brenda M.

From: Carney, Kristen Shults [KCarney@faegre.com]
Sent: Tuesday, June 06, 2006 10:05 AM
To: Tom Ginn
Subject: List of data collected by State

Attachments: SFX538.pdf

SFX538.pdf (2 MB)

<<SFX538.pdf>> For your review.

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McHenry, Brenda M.

From: Carney, Kristen Shults [KCarney@faegre.com]

Sent: Tuesday, June 06, 2006 10:05 AM

To: Tom Ginn

Subject: Rule 26 Initial Disclosures (All Parties)

Attachments: Tyson-Cobb Vantress' Initial Disclosures.doc; Cargill Inc's Initial Disclosures.doc; Cargill Turkey Production LLC's Initial Disclosures.doc; Cal-Maine's Initial Disclosures.pdf; George's Initial Disclosures.pdf; Plaintiff's Initial Disclosures.pdf; Willow Brook's Initial Disclosures.pdf; Simmons' Initial Disclosures.doc; Peterson's Initial Disclosures.pdf

Attached are the disclosures that were served by all parties (except third parties).

<<Tyson-Cobb Vantress' Initial Disclosures.doc>> <<Cargill Inc's Initial Disclosures.doc>> <<Cargill Turkey Production LLC's Initial Disclosures.doc>> <<Cal-Maine's Initial Disclosures.pdf>> <<George's Initial Disclosures.pdf>> <<Plaintiff's Initial Disclosures.pdf>> <<Willow Brook's Initial Disclosures.pdf>> <<Simmons' Initial Disclosures.doc>> <<Peterson's Initial Disclosures.pdf>>

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McHenry, Brenda M.

From: Carney, Kristen Shults [KCarney@faegre.com]
Sent: Thursday, June 08, 2006 5:15 PM
To: Tom Ginn
Subject: Excerpts of EPA's Wadeable stream assessment

Attachments: Wadeable Stream Assessment Excerpts.pdf

Wadeable Stream Assessment Exc...

For your review.

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McHenry, Brenda M.

From: Sheryl Law
Sent: Wednesday, June 14, 2006 4:04 PM
To: Tom Ginn
Subject: Number of poultry houses and flocks

This pdf from OK Agriculture, Food and Forestry looks interesting. It gives a good summary of how many flocks and houses each integrator owns.

http://www.oklaosf.state.ok.us/~okag/forms/water/nepfo.pdf

Privileged and Confidential--

--Attorney Work Product--

--Prepared at Request of Counsel--

Sheryl Law

McHenry, Brenda M.

From: Carney, Kristen Shults [KCarney@faegre.com]

Sent: Monday, July 31, 2006 9:47 AM

To: Tom Ginn

Subject: Additional documents for your review

Attachments: Scanned document <171 pages ~7281 KB> -- 7/31/2006 8:36:09 AM; Scanned document <22 pages ~854 KB> -- 7/31/2006 8:31:55 AM; Scanned document <19 pages ~1321 KB> -- 7/31/2006 8:30:30 AM

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McHenry, Brenda M.

From: Carney, Kristen Shults [KCarney@faegre.com]
Sent: Monday, August 07, 2006 4:27 PM
To: Tom Ginn
Subject: FW: Best Bass lakes in OK

Attachments: Tulsa World Article 080606.pdf

Tulsa World Article 080606.pdf...

For your review.

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OUTDOORS

Full Moon Fishing

The August full moon peak Wednesday, providing anglers almost a [illegible] scorching day outings. Grand Lake remains a terrific night [illegible]

TIP OF THE WEEK

[illegible] season opens statewide in Oklahoma on Sept. 1. [illegible] needing a place for an opening day and [illegible] should start checking out the ads from [illegible]. They will be running on most Sundays prior to the opener in the World's classifieds [illegible] Sporting Goods, category 3740.

IMPORTANT DATES TO REMEMBER

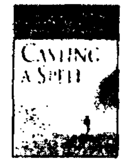
Aug. 25-27: Oklahoma Wildlife Expo, Lazy E Arena north of Oklahoma City.

Sept. 1: Dove hunting season opens statewide

Sept. 2: Free Hunting Days in Oklahoma, for residents only

WHAT'S NEW

The most recent publication to cross the outdoor desk is Casting a Spell by George Black. This is the story of the fabled bamboo fly rod. It details how they were first invented, who made them and still makes them, and the fraternity of fishermen who still enjoy using them. It's a $24 item from Random House and available online at www.randomhouse.com.



TULSA WORLD — Sunday, August 6, 2006

Carp are a worthy adversary

By Eric Sharp

Let's get something straight: We're not fishing for bass, which are so aggressive they'll hit an old doorknob, or trout, which are so dumb they sometimes don't recognize food even when they're starving.

Our fly-rod quarry today is the noble carp. Anyone who has fly-fished for bonefish will pick up fly casting for carp quickly.

Carp usually will spook if you drop anything within a foot or two. Carp normally dart off a few feet, then, if there's no immediate threat, slow down and look around to see what disturbed them.

That's where the frustration begins for a lot of anglers because they keep casting to an alerted carp, which is like sitting in front of a bookie joint in a police car, wondering why no one goes in or out.

Fly-fishing for carp nearly always involves sight-fishing in water less than 4 feet deep, and it's a stealth game. Ideally, drop the fly about 2-3 feet ahead of and 3-5 feet beyond the fish and then strip it back slowly so that it passes within a few inches of the carp at eye level. Tailing fish — picking invertebrates off the bottom with their tails in the air — are easier to fool.

But it's just as important to make sure the carp doesn't see you. That's why long casts help, and so does keeping your silhouette down.

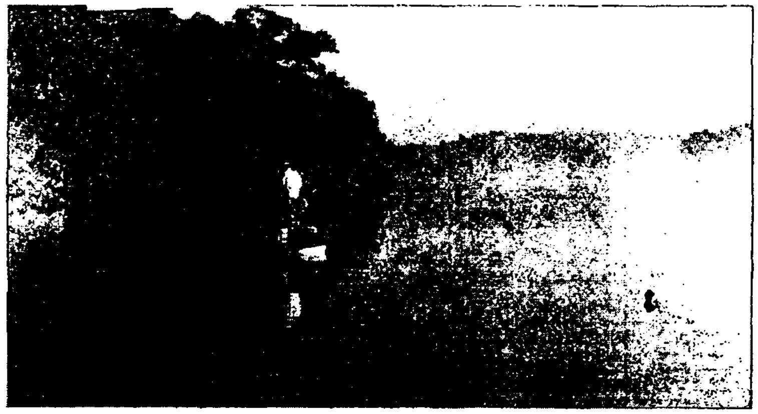
When I'm wading shallow waters, I spend a lot of time walking in a crouch and casting from my knees.

If you fish from a boat, don't run a motor—not even an electric motor. Use a push pole, and handle it gently. If fishing from shore, walk quietly and cast from as far as you can reach the fish without slapping the water.

For inland lakes and rivers, even though the fish run smaller, I normally use an 8-weight because these waters tend to have a lot more snags. Sometimes you have no choice but to lay the rod over sideways and apply pressure to keep the fish out of the sunken timber.

When it comes to flies, think of natural-looking patterns like a No. 8 woolly bugger in brown, black or olive, No. [illegible] black stonefly nymph, No. 10 green caddis larvae, No. 8 Spring's wiggler and [illegible].

Carp are so cautious that [illegible] bait fishermen use sinkers painted to look like [illegible]. That should tell you something about how a carp will react to a big, gaudy, unnatural-looking fly.



Courtesy

An angler works a misty bank early in the morning at Fort Gibson Lake, which has rebounded with some of the best bass population numbers in the state.

Top bass lakes nearby

SAM POWELL
[illegible]

IF YOU WANT to just catch a lot of bass, when this miserable weather cools, there are again several special spots in Oklahoma to consider.

For the eighth straight year, Konawa Lake ranked No. 1 among large waters for producing the most bass for fishery research teams from the Oklahoma Department of Wildlife Conservation. Covering 1,300 acres in Seminole County, Konawa turned up 132 bass per hour this past spring for electroshocking boats of the fishery division.

And for small waters, under 1,000 acres, Okmulgee City Lake produced an impressive 149 bass per hour. In these annual surveys, fishery crews work the shallows during the peak of bass spawning. Fish are shocked to the surface, netted, weighed and measured, and then released unharmed back into the lake.

"It's really no surprise that Konawa is number one again," Kim Erickson, fishery division chief for the Wildlife Department, said. "It's just a great bass fishery. It has good numbers of bass, and the population is very well balanced. It also ranks first again in the number of larger bass (over 14 inches) among larger lakes."

It must again be noted in this report, certainly not every lake in this water-rich state is surveyed each year.

The Wildlife Department tries to alternate its survey choices and keep track of what's happening on various waters. Although the survey was taken last spring, it offers tips to anglers on spots to consider when the good fall fishing begins.

The survey always shows some surprising trends. Old Fort Gibson Lake has come back as a good bass fishery. It produced 114 bass per hour, ranking second. And that's an amazing reversal after several terrible seasons following that major summer die-off there in the late 1990s.

Other tops spots for big-water bass fishermen included, in order, Sooner, McGee Creek and Tenkiller.

Fishery crews were also hampered in their surveys at many spots, such as Tenkiller, this past spring due to extremely low lake levels.

Okmulgee Lake continues to produce strong bass numbers. Much of that has occurred following the complete drawdown and draining of sister lake, Dripping Springs, several years ago. Hundreds of quality-sized bass were captured at the latter lake and released into Okmulgee.

Tiny Coon Creek Lake, near Wilburton, was a close second in waters under 1,000 acres with 148 bass per hour. These smaller lakes are ideal for the popular mini-boats, a canoe or even inner tube floaters.

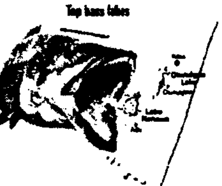
Others spots in the top five included American Horse, a Wildlife Department lake near Geary, Elmer Thomas near the Wichita Mountains Wildlife Refuge, and Carlton Lake in Robbers Cave State Park.

The Wildlife Department classifies a lake as "quality" if it can produce at least 40 catchable size bass an hour. And 10 of those bass must measure at least 14 inches. Some lakes are also rated as "high quality" and even "trophy quality." For that top rating, it must produce two bass over 21 inches per hour.

It must also be noted, again, that many of those small lakes included in this year's survey require special user fees, such as boat launching or angler permits.

Families can learn more about this type of fishery management, including techniques such as electrofishing and trap netting, at this month's upcoming Oklahoma Wildlife Expo, Aug. 25-27. Interested anglers can register for a field trip to Guthrie Lake via the department's Web site at www.wildlifedepartment.com.

Top bass lakes



BEST LAKES

Fishery research teams from the Oklahoma Department of Wildlife Conservation took their annual survey of lakes.

The chart lists the lakes, the Bass Abundance (the number per hour), the Bass Size (number that were over 14 inches per hour) and the Heaviest Fish caught (in pounds).

Lake	No.	Size	Wt.
[illegible]	53	40	6
Konawa	132	40	6
Okmulgee	149	72	9
Sportsman's	57	19	8
Wes Watkins	16	17	6
Wewoka	18	18	4
Broken Bow	43	8	5
Carlton	107	18	7
Cedar	97	28	3
Coon Creek	148	10	6
[illegible] Branch	76	6	4
Hugo	75	1	4
Sardis	46	15	9
Wayne Wallace	75	9	7
[illegible]	41	3	3
Fort Gibson	114	33	6
[illegible]	24	5	4
Tenkiller	69	35	4
Yahola	6	3	5
Durant	36	12	7
McGee Creek	86	27	6
Pauls Valley	21	3	8
Texoma	61	10	8
Draper	75	4	5
Hefner	31	11	6
Thunderbird	42	20	7
American Horse	133	10	2
Boomer	103	38	6
Carl Blackwell	53	6	5
Elmer	119	26	6
Shawnee	80	9	3
Sooner	101	19	6
Vincent	19	2	3
Watonga	48	20	10

Ginn007036

McHenry, Brenda M.

From: Sheryl Law
Sent: Tuesday, May 01, 2007 1:57 PM
To: Tom Ginn;
Subject: Phytoplankton and BMI

There is a paper by OSDH that has historical phytoplankton and benthic data in various streams in the IRW and Tenkiller. The file is too large to email but you can download it from our network \\Bellevue1\work\Cargill\Documents, file is OSDH77A.

Sheryl Law

Privileged and Confidential--

--Attorney Work Product--

--Prepared at Request of Counsel--

McHenry, Brenda M.

From: Carney, Kristen Shults [KCarney@faegre.com]
Sent: Monday, June 04, 2007 10:40 AM
To: Tom Ginn
Subject: 2005 BUMPS Report
Attachments: 2005 BUMPS data.pdf

For your review. You may already have this report.

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also **provisional** at the publication of this report. As of the beginning of 2002, the OWRB was gaging all but 4 permanent station locations. Where permanent water-quality monitoring stations were located near a United States Geological Survey (USGS) stream-flow monitoring station, the information collected by USGS is used to determine if a high-flow event exceeding seasonal base flow had occurred at the time of sampling.

Table 1. Permanent Ambient Trend Monitoring Stations and their Beneficial Use Support Status.

STATION NAME	FWP	PBCR	PPWS	AG	AES
ARKANSAS RIVER, US 64, MOFFETT	S	NS (8)	S	S	NT
ARKANSAS RIVER, SH 104, HASKELL	S	S	N/A	NS (10)	NT
ARKANSAS RIVER, SH 18, RALSTON	NS (5)	NS (8)	S	S	NT
ARKANSAS RIVER, SH 97, SAND SPRINGS	S	S	N/A	S	NT
ARKANSAS RIVER, US 62, MUSKOGEE	NS (3)	NS (8)	N/A	S	NT
ARKANSAS RIVER, US 64, BIXBY	S	NS (6, 7, 8)	N/A	S	NT
BARREN FORK, SH 51, ELDON	S	NS (8)	S	S	NS (14)
BEAVER RIVER, OFF US 64, GUYMON	S	NS (6, 7, 8)	S	S	NT
BEAVER RIVER, US 83, TURPIN	S	NS (6, 7, 8)	N/A	NS (10, 11)	NT
BEAVER RIVER, SH 23, BEAVER	S	NS (6, 8)	N/A	NS (10, 11)	NT
BEAVER RIVER, US 283, LAVERNE	S	NS (8)	N/A	S	NT
BEAVER RIVER, CR N1650, GATE	S	NS (6, 8)	N/A	NS (10, 11)	NT
BEAVER RIVER, US 183, FORT SUPPLY	S	NS (8)	N/A	S	NT
BIG CABIN CREEK, OFF US 69, BIG CABIN	S	NS (7, 8)	S	PS (12)	NT
BIRD CREEK, SH 266, PORT OF CATOOSA	NS (5)	NS (6, 8)	S	S	NT
BLACK BEAR CREEK, SH 18, PAWNEE	NS (5)	NS (6, 8)	S	S	NT
BLUE RIVER, US 70, DURANT	S	NS (8)	S	S	NT
BRUSHY CREEK, OFF US 270, HAILEYVILLE	NS (1, 3, 5)	NS (8)	S	S	NT
CANADIAN RIVER, SH 2, WHITEFIELD	S	S	S	S	NT
CANADIAN RIVER, US 183, TALOGA	PS (5)	NS (8)	N/A	NS (10, 11)	NT
CANADIAN RIVER, US 270, CALVIN	PS (5)	NS (8)	S	PS (12)	T (17)
CANADIAN RIVER, US 377, KONAWA	NS (3,5)	NS (8)	S	NS (10)	T (17)
CANADIAN RIVER, US 66, BRIDGEPORT	NS (5)	NS (8)	N/A	S	NT
CANADIAN RIVER, US 77, PURCELL	PS (5)	N/A	N/A	S	T (17)
CANEY CREEK, OFF SH 100, BARBER	S	S	S	S	NT
CANEY RIVER, OFF US 75, RAMONA	NS (3, 5)	NS (8)	S	S	NT

STATION NAME	FWP	PBCR	PPWS	AG	AES
CHICKASKIA RIVER, US 177, BLACKWELL	NS (3, 5)	NS (6, 8)	S	S	NT
CIMARRON RIVER, OFF SH 8, NEAR AMES (ORIENTA)	PS (5)	NS (6, 7, 8)	N/A	NS (10, 11, 12)	NT
CIMARRON RIVER, SH 34, BUFFALO	S	NS (6, 7, 8)	N/A	NS (10)	NT
CIMARRON RIVER, SH 99, CIMARRON	NS (5)	NS (6, 8)	N/A	S	NT
CIMARRON RIVER, US 77, GUTHRIE	PS (5)	NS (6, 8)	N/A	S	NT
CIMARRON RIVER, US 81, DOVER	PS (5)	NS (7, 8)	N/A	NS (10)	NT
CIMARRON RIVER, OFF US 64, MOCANE	S	NS (6, 8)	S	NS (10, 11)	NT
CIMARRON RIVER, SH 33, RIPLEY	NS (5)	NS (8)	N/A	S	NT
CIMARRON RIVER, US 281, NEAR WAYNOKA	NS (16)		N/A	NS (10, 11)	NT
CLEAR BOGGY CREEK, OFF US 69, CANEY	NS (3, 5)	NS (6, 8)	S	S	NT
DEEP FORK RIVER, OFF SH 16, BEGGS	NS (3, 5)	NS (8)	S	S	NT
DEEP FORK RIVER, US 377, STROUD	NS (3, 5)	NS (8)	PS (9)	S	NT
EAST CACHE CREEK, SH 53, WALTERS	NS (5)	NS (6, 7, 8)	S	S	NT
ELK CREEK, OFF US 183, HOBART	NS (5)	NS (6, 8)	S	S	NT
ELK RIVER, SH 43, TIFF CITY (MO)	S	NS (8)	S	S	NT
ELM FORK RIVER, SH 9, MANGUM	S	NS (6, 7, 8)	S	S	NT
FLINT CREEK, US 412, FLINT	S	NS (8)	S	S	NS (14)
FOURCHE-MALINE CREEK, OFF US 270, RED OAK	NS (1, 3)	NS (8)	S	S	NT
GLOVER RIVER, SH 3, GLOVER	NS (1, 3, 5)	NS (8)	S	S	NT
HONEY CREEK, OFF SH 25, GROVE	S	NS (8)	S	S	T (15)
ILLINOIS RIVER, US 59, WATTS	PS (5)	NS (8)	S	S	NS (14)
ILLINOIS RIVER, US 62, TAHLEQUAH	S	S	S	S	NS (14)
KIAMICHI RIVER, OFF US 271, TUSKAHOMA	NS (2, 3)	S	S	S	NT
KIAMICHI RIVER, SH 63, BIG CEDAR	NS (3, 4)	NS (8)	S	S	NT
KIAMICHI RIVER, US 271, ANTLERS	NS (2, 3)	NS (8)	S	S	NT
KIAMICHI RIVER, SH 109, FORT TOWSON	PS (5)	NS (8)	S	S	NT
LEE CREEK, SH 101, SHORT	S	NS (8)	S	S	S
LITTLE RIVER, OFF SH 3, CLOUDY	NS (3, 5)	NS (8)	S	S	NT
LITTLE RIVER, OFF US 70, NEAR HOLLY CREEK	NS (1, 5)		S	S	NT
LITTLE RIVER, SH 56, SASAKWA	NS (3, 5)	NS (8)	S	S	NT
MOUNTAIN FORK, SH 4, SMITHVILLE	NS (2, 3, 5)	S	S	S	NS (14)
MOUNTAIN FORK, US 70, EAGLETOWN	NS (2, 3)	NS (8)	S	S	NT

STATION NAME	FWP	PBCR	PPWS	AG	AES
MUD CREEK, SH 32, COURTNEY	NS (1, 5)	NS (8)	S	S	NT
MUDDY BOGGY CREEK, US 70, UNGER	NS (3, 5)	NS (6, 8)	S	S	NT
MUDDY BOGGY CREEK, US 69, ATOKA	NS (1, 3, 5)	NS (6, 8)	S	S	NT
NEOSHO RIVER, OFF US 66, COMMERCE	NS (3, 5)	S	S	S	NT
NEOSHO RIVER, OFF SH 137, CONNOR BRIDGE	PS (5)	S	S	S	NT
NEOSHO RIVER, SH 82, LANGLEY	S	S	S	S	NT
NEOSHO RIVER, US 412, CHOUTEAU	S	S	S	S	NT
NORTH CANADIAN RIVER, IND. NAT. TPK., DUSTIN	NS (3, 5)	NS (6, 8)	S	S	NT
NORTH CANADIAN RIVER, SH 3E, SHAWNEE	NS (3, 4, 5)	NS (8)	N/A	S	T (13, 17)
NORTH CANADIAN RIVER, OFF US 62, HARRAH	PS (5)	NS (6, 8)	N/A	S	T (13, 17)
NORTH CANADIAN RIVER, US 270, WATONGA	S	NS (6, 7, 8)	S	S	NT
NORTH CANADIAN RIVER, US 281, SEILING	PS (5)	NS (8)	S	S	NT
NORTH CANADIAN RIVER, US 75, WETUMKA	NS (3, 5)	NS (6, 8)	S	S	T (13, 17)
NORTH CANADIAN RIVER, US 412, WOODWARD	S	NS (8)	N/A	S	NT
NORTH CANADIAN RIVER, US 81, EL RENO	S	NS (8)	S	S	NT
NORTH FORK OF THE RED RIVER, US 62, HEADRICK	S	NS (8)	S	NS (10, 11)	T (17)
NORTH FORK OF THE RED RIVER, SH 34, CARTER	S	NS (8)	S	S	NT
POTEAU RIVER, OFF SH 112, POCOLA	NS (3, 5)	NS (8)	S	S	NT
POTEAU RIVER, US 59, HEAVENER	S	S	S	S	NT
RED RIVER, SH 79, WAURIKA	NS (5)	NS (8)	S	NS (10, 11, 12)	NT
RED RIVER, US 183, DAVIDSON	NS (3, 5)	NS (6, 8)	N/A	NS (10, 11, 12)	T (17)
RED RIVER, US 259, HARRIS	PS (5)	S	S	S	NT
RED RIVER, US 271, HUGO	PS (5)	NS (8)	S	NS (10, 11)	NT
RED RIVER, US 81, TERRAL	NS (5)	NS (8)	S	NS (11, 12)	NT
SAGER CREEK, OFF US 412, WEST SILOAM SPRINGS	S	NS (8)	PS (nitrates)	S	T (13, 15)
SALT FORK OF THE ARKANSAS, SH 58, INGERSOLL	NS (5)	NS (6, 7, 8)	S	S	NT
SALT FORK OF THE ARKANSAS, US 77, TONKAWA	NS (5)	NS (8)	S	S	NT
SALT FORK OF THE RED RIVER, SH 34, MANGUM	S	NS (8)	S	S	NT
SALT FORK OF THE RED RIVER, OFF US 283, ELMER	NS (3)	NS (6, 8)	S	PS (11)	NT
SANDY CREEK, SH 6, ELDORADO	NS (2, 3, 5)	N/A	N/A	NS (10, 11, 12)	NT
SKELETON CREEK, SH 74, LOVELL	NS (5)	NS (6, 8)	S	S	NT
SPRING CREEK, OFF US 412, MURPHY	S	S	S	S	NT

STATION NAME	FWP	PBCR	PPWS	AG	AES
SPRING RIVER, OFF SH 137, QUAPAW	NS (2, 3, 5)	NS (8)	S	S	NT
VERDIGRIS RIVER, US 412, INOLA	NS (3, 5)	NS (8)	S	S	NT
VERDIGRIS RIVER, SH 10, LENEPAH	NS (3, 5)	NS (8)	S	S	NT
VERDIGRIS RIVER, SH 20, KEETONVILLE	PS (5)	NS (8)	S	S	NT
VERDIGRIS RIVER, SH 51, WAGONER	NS (2, 3, 5)	NS (8)	S	S	NT
WASHITA RIVER, OFF SH 19, ALEX	NS (5)	NS (6, 8)	S	S	NT
WASHITA RIVER, SH 152, CORDELL	NS (5)	NS (6, 7, 8)	S	S	T (17)
WASHITA RIVER, SH 19, PAULS VALLEY	NS (5)	NS (8)	S	S	NT
WASHITA RIVER, SH 33, HAMMON	PS (5)	NS (6, 7, 8)	S	S	NT
WASHITA RIVER, US 177, DURWOOD	NS (5)	NS (6, 8)	S	S	NT
WASHITA RIVER, US 281, ANADARKO	NS (5)	NS (6, 8)	S	S	NT
WEST CACHE CREEK, SH 5B, TAYLOR	NS (5)	NS (6, 7, 8)	S	PS (11)	NT
WOLF CREEK, OFF US 270, FORT SUPPLY	S	NS (8)	S	S	NT

ASSIGNED WQS BENEFICIAL USES	
FWP = FISH & WILDLIFE PROPAGATION	PBCR = PRIMARY BODY CONTACT RECREATION
PPWS = PUBLIC AND PRIVATE WATER SUPPLY	AG = AGRICULTURE
AES = AESTHETICS	

SUPPORT CODES		
S—FULLY SUPPORTING	PS—PARTIALLY SUPPORTING	NS—NOT SUPPORTING
N/A—NOT APPLICABLE	NT-NOT THREATENED (NUTRIENTS)	T-THREATENED (NUTRIENTS)

WATER QUALITY VARIABLES		
1—DISSOLVED OXYGEN	2—METALS (ACUTE)	3—METALS (CHRONIC)
4—PH	5—TURBIDITY	6—FECAL COLIFORM
7— *ESCHERICHIA COLI*	8— ENTEROCOCCI	9—METALS
10— TOTAL DISSOLVED SOLIDS	11— CHLORIDES	12— SULFATES
13— TOTAL PHOSPHORUS (TP)	14—TP OK SCENIC RIVER CRITERION	15— NITRITE + NITRATE
16—BIOCRITERIA	17—SESTONIC CHLOROPHYLLL-A (TSI)	

McHenry, Brenda M.

From: Carney, Kristen Shults [KCarney@faegre.com]
Sent: Monday, August 27, 2007 2:52 PM
To: Tom Ginn
Subject: "Algae Threatens Rivers' Ecosystems"

Attachments: SCAN1666_000.pdf

SCAN1666_000.pdf
(217 KB)

For your review.

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Algae Threatens Rivers' Ecosystems

▪ *'Rock snot,' already a problem in the South and West, is moving into New England*

BY [illegible]

STOCKBRIDGE, Vt. — It looks like a clump of soiled sheep's wool, a cottony green or white mass that's turning up on rocks and river bottoms, [illegible] waterways.

Already a scourge in New Zealand and parts of the American South and West, the [illegible] algae called "rock snot" is creeping into New England, where it's turning up in [illegible] and alarming [illegible] men and wildlife [illegible].

"It [illegible]," said [illegible] Weber, a fly fishing guide [illegible] first spotted [illegible] [illegible] River in [illegible] in June. "It's [illegible] when [illegible] mode and [illegible] trout population [illegible] significant."

Over the past [illegible] years, the algae with a scientific name [illegible] Didymosphenia [illegible], or didymo, has turned up in California, Washington, [illegible], Idaho, Montana, [illegible], Wyoming, Colorado, the Dakotas, Missouri, Arkansas and Tennessee.

"We're starting to [illegible] all over the place," said [illegible] Hermann, a regional [illegible] monitoring and assessment coordinator for the Environmental Protection Agency in Denver.

What started out in Vancouver Island in British Columbia "has suddenly just skyrocketed," he said.

The algae has the potential to bloom into thick masses with long stalks, blanketing the bottoms of some streams, threatening aquatic insect and fish populations by smothering food sources.

In New England, [illegible] turned up in the White River, Connecticut River and the Batten Kill, a trout fishing mecca in southern Vermont that's famed for its hard-to-catch fish. Quebec is grappling with it in Matapedia River in the [illegible] St. Lawrence.

[illegible] no easy way to get rid [illegible]. Experts say the only hope [illegible] spreading, [illegible] challenge, [illegible] [illegible] [illegible] other [illegible]

[illegible] and New Hampshire [illegible] launched [illegible] [illegible] to [illegible] boats and clean [illegible]

"[illegible] don't take chances, [illegible] your fishing gear," [illegible] Decker, program [illegible] with the New Hampshire Fish and Game Department.

[illegible] yet what effect [illegible] will have on fish populations, according to [illegible], an ecologist with the U.S. Geological Survey [illegible]. But many are [illegible]

"[illegible] remove (insects), [illegible] have anything [illegible]," said David Deen, a Vermont lawmaker who is a fishing guide and river steward for the Connecticut River Watershed Council. "Growth is slowed at best and at worst they could starve to death."

In South Dakota, the algae is [illegible]

Not only does rock snot threaten fish, but it's an unsightly nuisance. Fishermen complain that they can't cast their lines or they pull them up covered in gunk.

McHenry, Brenda M.

From: Carney, Kristen Shults [KCarney@faegre.com]

Sent: Thursday, September 27, 2007 10:56 AM

To: Tom Ginn

Subject: Statements to U.S. Senate - Sept. 6, 2007

Attachments: Edmondson Written Statement 090607- Senate Committee on Environment and Public Works.pdf; Michael Dicks Statement 090604- U.S. Senate.pdf

See attached a copy of the AG's recent statement to the U.S. Senate, as well as the statement from Dr. Michael Dicks at OSU, taken from the U.S. Senate Committee on Environment and Public Works website at http://epw.senate.gov/public/index.cfm?FuseAction=Hearings.Hearing&Hearing_ID=cdde1d94-802a-23ad-4e1e-780154d586eb.

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McHenry, Brenda M.

From: Scott Endicott
Sent: Thursday, September 27, 2007 12:08 PM
To: Tom Ginn
Cc:
Subject: Frog deformities

Attachments: frog1_20070927110406.pdf; frog2_20070927110435.pdf; frog3_20070927110457.pdf


frog1_20070927110406.pdf (79 K...


frog2_20070927110435.pdf (119 ...


frog3_20070927110457.pdf (168 ...

This study has not been published yet. It is just a news release. I have attached two versions of the news release and a site where you can go to the podcast to hear about the study. There is also contact information for professor Pieter Johnson at U of Colorado.

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CU-Boulder Study: Nutrient Pollution Drives Frog Deformities By Ramping Up Infections

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Farewell Exhibition For CU's Sibell Wolle Fine Arts Building To Be Held Oct. 5-6

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Nutrient Pollution Drives Frog Deformities By Ramping Up Infections

When deformed frogs in lakes and ponds around the United States caught the attention of the public more than a decade ago, puzzled scientists speculated the phenomenon might be caused by pesticides, UV radiation or infection. Listen to CU-Boulder Assistant Professor Pieter Johnson describe how a new study that he led, published in the Proceedings of the National Academy of Sciences, shows that that high levels of nutrients used in farming and ranching activities fuel frog deformities by enhancing snail populations that spread infectious parasites to tadpoles.

Play www.colorado.edu/news/podcasts

CU-Boulder Geography Professor Discusses Memorials Such as the New Columbine Memorial

Public release date: 24-Sep-2007
[Print Article | E-mail Article | Close Window]

Contact: Pieter Johnson
Pieter.Johnson@colorado.edu
303-492-5623
University of Colorado at Boulder

Nutrient pollution drives frog deformities by ramping up infections, says CU-Boulder study

High levels of nutrients used in farming and ranching activities fuel parasite infections that have caused highly publicized frog deformities in ponds and lakes across North America, according to a new study led by the University of Colorado at Boulder.

A new study led by the University of Colorado at Boulder indicates high levels of nutrients used in farming and ranching activities can trigger frog deformities by fueling parasite infections.
Click here for more information.

The study showed increased levels of nitrogen and phosphorus cause sharp hikes in the abundance and reproduction of a snail species that hosts microscopic parasites known as trematodes, said Assistant Professor Pieter Johnson of CU-Boulder's ecology and evolutionary biology department. The nutrients stimulate algae growth, increasing snail populations and the number of infectious parasites released by snails into ponds and lakes. The parasites subsequently form cysts in the developing limbs of tadpoles causing missing limbs, extra limbs and other severe malformations, Johnson said.

"This is the first study to show that nutrient enrichment drives the abundance of these parasites, increasing levels of amphibian infection and subsequent malformations," said Johnson. "The research has implications for both worldwide amphibian declines and for a wide array of diseases potentially linked to nutrient pollution, including cholera, malaria, West Nile virus and diseases affecting coral reefs."

University of Colorado Assistant Professor Pieter Johnson and his colleagues have been studying the role of nutrient pollution in frog deformities.
Click here for more information.

Johnson is the lead author of a study on the subject published online the week of Sept. 24 in the Proceedings of the National Academy of Sciences. Co-authors include Jonathan Chase from Washington University, Katherine Dosch, Richard Hartson, Daniel Sutherland and Stephen Carpenter from the University of Wisconsin, Jackson Gross from the Southern California Coastal Water Research Project and Don Larson from University of Alaska. The National Science Foundation funded the work.

Deformed frogs first gained international attention in the mid-1990s when a group of Minnesota schoolchildren discovered a pond where more than half of the leopard frogs had missing or extra limbs, he said. Since then, reports of deformed amphibians have become widespread in the United States, leading to speculation they were being caused by factors like pesticides, increased ultraviolet radiation or parasitic infection.

While parasite infection is now recognized as a major cause of such deformities, the environmental factors responsible for increases in parasite abundance had largely remained a mystery until the study was undertaken, Johnson said.

"One of our main goals was to understand how parasites are going to respond to land-use

changes and ecosystem alterations," he said. "What we found is that nitrogen and phosphorus pollution from agriculture, cattle grazing and domestic runoff have the potential to significantly promote parasitic infection and deformities in frogs."

The trematode has a complex life cycle that involves three host species, he said. In addition to the infectious stage in snails and the cyst stage in frogs, the parasites rely on predators including wading birds to complete their life cycle by consuming infected frogs and spreading the parasite back into the ecosystem through defecation.

The research team built 36 artificial ponds in central Wisconsin similar to farm stock tanks -- a common breeding site of frogs and salamanders -- and stocked each with selected numbers of snails and tadpoles of the green frog. In addition to adding nutrients, the researchers took on the role of birds in the trematode life cycle by adding parasite eggs to the tanks, then measuring the subsequent ecological responses.

In ponds with added nutrients, snail biomass increased by 50 percent and the snails increased parasite egg production by up to eight-fold, he said. The infection rate in frogs rose by two- to five-times in those tanks, Johnson said.

As few as 12 trematode larvae, known as cercariae, can kill or deform a single tadpole by burrowing into their limb regions and disrupting normal leg development, he said. A single infected snail can produce more than 1,000 cercariae in one night. Frogs that become deformed rarely survive long in the wild, he said.

"We were able to watch nutrient pollution move through the life cycle of the parasite as it cascaded through the food web," he said. "Since most human diseases involve multiple hosts, understanding how increased nutrient pollution affects freshwater and marine food webs to influence disease is an emerging frontier in ecological research."

A recent study of more than 6,000 species of amphibians worldwide concluded that 32 percent were threatened and 43 percent were declining in population. While the causes range from habitat loss to emerging disease, the researchers are now exploring how nutrient pollution and limb malformations contribute to the pattern, Johnson said.

###

For more information on Johnson's research, visit the Web at: http://www.colorado.edu/eeb/facultysites/pieter/index.htm or listen as Johnson describes the results of the study at: http://www.colorado.edu/news/podcasts.

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Press Release 07-123

Nutrient Pollution Drives Frog Deformities by Ramping Up Infections

Environmental causes of frog deformities finally identified

Farming nutrients drive parasitic infections that in turn cause frog leg deformity.
Credit and Larger Version

Infectious parasites cause missing limbs, extra limbs and other malformations in frogs.
Credit and Larger Version

Environmental factors causing frog deformities were a mystery until this study.
Credit and Larger Version

September 24, 2007

High levels of nutrients used in farming and ranching activities fuel parasite infections that have caused highly publicized frog deformities in ponds and lakes across North America, according to a new study led by the University of Colorado at Boulder.

The study showed increased levels of nitrogen and phosphorus cause sharp hikes in the abundance and reproduction of a snail species that hosts microscopic parasites known as trematodes, said Pieter Johnson of the University of Colorado, Boulder. The nutrients stimulate algae growth, increasing snail populations and the number of infectious parasites released by snails into ponds and lakes. The parasites subsequently form cysts in the developing limbs of tadpoles causing missing limbs, extra limbs and other severe malformations, Johnson said.

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Co-authors include Jonathan Chase from Washington University; Katherine Dosch, Richard Hartson, Daniel Sutherland and Stephen Carpenter from the University of Wisconsin; Jackson Gross from the Southern California Coastal Water Research Project; and Don Larson from University of Alaska.

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McHenry, Brenda M.

From: Sheryl Law
Sent: Friday, October 19, 2007 3:24 PM
To: Tom Ginn
Subject: RE: Reference Lake
Attachments: Reservoir Sampling SOP.pdf

FYI, attached is the SOP that first mentions the reference lake. It was produced in the last data submittal.

Privileged and Confidential
Attorney Work Product
Prepared at Request of Counsel

From: Gary Bigham
Sent: Friday, October 19, 2007 2:17 PM
To: Tom Ginn
Cc: Sheryl Law
Subject: Reference Lake

Tom,

This appears to be the AG's reference lake based on their last data submittal.

Gary

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